

UNITED STATES DISTRICT COURT  
FOR THE SOUTHERN DISTRICT OF TEXAS

NEXOM (US), INC.	)	
	)	
Plaintiff,	)	
	)	
vs.	)	
	)	Case No. 17-cv-1819
FIVE STAR FILTRATION LLC	)	
	)	
Defendant.	)	
	)	
	)	

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**COMPLAINT**

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Nexom (US), Inc. (“Nexom”), by and for its Complaint against Defendant Five Star Filtration LLC (“Five Star Filtration”), alleges to the Court as follows:

**PARTIES**

1. Nexom is a company organized and existing under the laws of the State of Delaware, with a principal place of business located at 101 Falls Rd., Suite 406, Grafton, Wisconsin 53024.

2. Nexom is informed and believes that Defendant Five Star Filtration is a corporation organized and existing under the laws of the State of Texas, with a principal place of business located at 12621 Hwy 105, Suite 205, Conroe, Texas 77304.

**JURISDICTION**

3. This is an action for patent infringement arising out of Five Star Filtration’s unauthorized manufacturing, offering for sale, and selling filtration systems in violation of Nexom’s patent rights. Because this is an action for infringement under the patent laws of the United States, 35 U.S.C. § 271, et seq., this Court has subject matter jurisdiction pursuant to 28

U.S.C. §§ 1331 and 1338(a).

4. This Court has personal jurisdiction over Five Star Filtration in that, upon information and belief, Five Star Filtration is incorporated in and resides in this judicial district.

### **VENUE**

5. Venue is proper in this judicial district pursuant to 28 U.S.C. §§ 1391(b) and (c) and 1400(b) because Five Star Filtration is incorporated in and resides in this District.

### **BACKGROUND**

6. Nexom is the assignee and owner of United States Patent No. 7,820,062 (“the ’062 patent”), which describes and discloses an innovative filtration method including a plurality of pile filter media.

7. Nexom is the exclusive licensee of United States Patent Nos. RE 44,570 (“the ’570 patent”) and 7,399,416 (“the ’416 patent”), which describe and disclose innovative reactive filtration methods. The ’570 and ’416 patents are owned by the Board of Regents of the University of Idaho and exclusively licensed to Nexom. Nexom has the right to sue on its own for damages.

8. The ’062 patent, entitled “Tertiary Filter,” was duly and legally issued by the United States Patent and Trademark Office on October 26, 2010, from Application Serial No. 12/692,410, filed on January 22, 2010. A true and correct copy of the ’062 patent is attached hereto as Exhibit A.

9. The ’570 patent, entitled “Reactive Filtration,” was duly and legally re-issued by the United States Patent and Trademark Office on November 5, 2013, from Application Serial No. 13/470,185, filed on May 11, 2012. A true and correct copy of the ’570 patent is attached hereto as Exhibit B.

10. The '416 patent, entitled "Reactive Filtration," was duly and legally re-issued by the United States Patent and Trademark Office on July 15, 2008, from Application Serial No. 10/727,963, filed on December 3, 2003. A true and correct copy of the '416 patent is attached hereto as Exhibit C.

**COUNT I**

**INFRINGEMENT OF U.S. PATENT NO. 6,308,062**

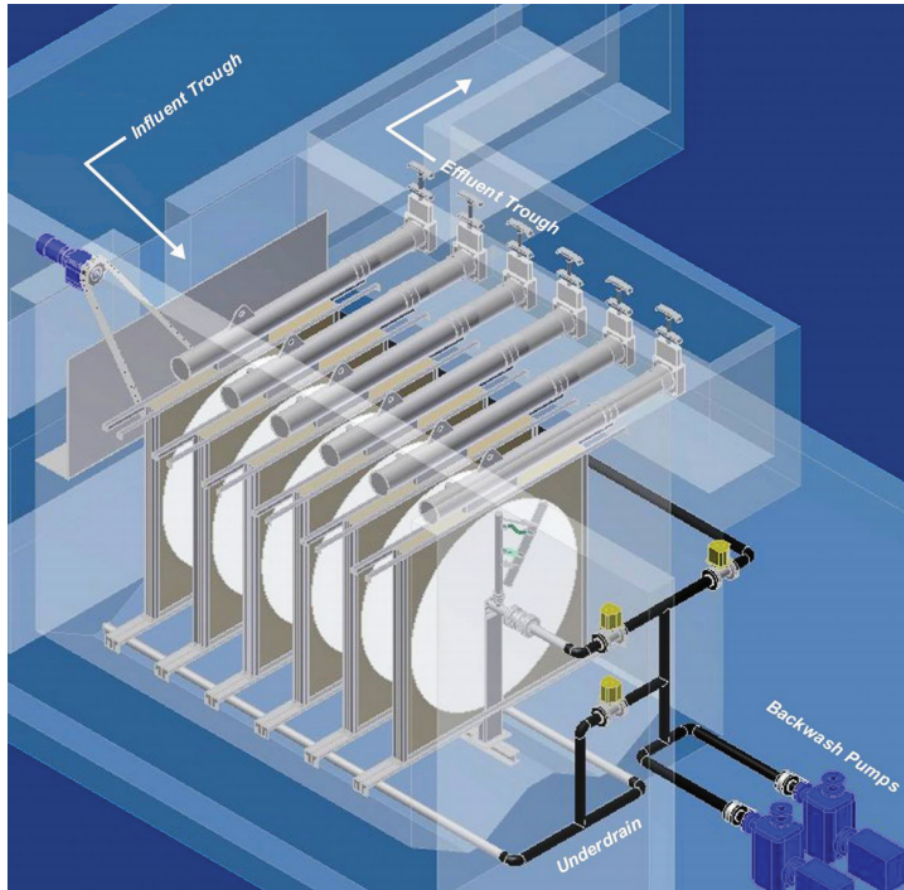
11. Nexom repeats and realleges each and every allegation contained in paragraphs 1-10, inclusive, as though fully set forth herein.

12. The '062 patent is valid and enforceable.

13. Nexom is the owner of all right, title, and interest in and to the inventions claimed in the '062 patent. Nexom is entitled to receive all damages and the benefits of all other remedies for Five Star Filtration's infringement.

14. Without permission or authorization from Nexom and in violation of 35 U.S.C. § 271, Five Star Filtration is making, selling, offering for sale, and/or using in this District and elsewhere in the United States, certain disk filter systems ("the accused Five Star Filtration disk filter systems") that infringe at least claim 1 of the '062 patent.

15. The image below from a Five Star Filtration brochure shows the accused Five Star Filtration disk filtration system. A copy of this brochure is attached hereto as Exhibit D.



16. Claim 1 of the '062 patent recites: “A method of operating a filter apparatus including a backwashing of a pile filter media comprising:”

17. Five Star Filtration has advertised that the accused Five Star Filtration disk filter “is designed as a continuous operating system that utilizes a fixed disk and a rotating backwash system controlled by a PLC control panel.” (Exh. D (Five Star Disk Filter Brochure), p. 2.)

18. Claim 1 of the '062 patent further recites: “providing a pile filter media comprised of a plurality of fiber bundles on a fabric backing.”

19. Five Star Filtration has advertised that the accused Five Star Filtration disk filter is formed of a cloth that “is capable of solids capture to 10 micron without having to build up a filter mat or require any run in time.” (Exh. D (Five Star Disk Filter Brochure), p. 2.) The cloth

is a pile cloth formed of a plurality of fiber bundles on a fabric backing.

20. Claim 1 of the '062 patent further recites: “flowing effluent containing entrained solids through the pile filter media in a first direction between the fiber bundles and then through the fabric backing.”

21. The image depicted above at Paragraph 15 shows that in the accused Five Star Filtration disk filter system, effluent containing entrained solids is flowed through the pile filter media in a first direction between the fiber bundles and then through the fabric backing. (Exh. D (Five Star Disk Filter Brochure), p. 3.)

22. Claim 1 of the '062 patent further recites: “backwashing said pile fabric with a suction head which suction head is spaced from and does not exert mechanical pressure on said filter media.”

23. Five Star Filtration has advertised that in the accused Five Star Filtration disk filter, “The filter disk remain fixed while the center shaft rotates the backwash arms and serves as the header for removal of solids from the filter. At the beginning of a backwash cycle, which is initiated by an increase in headloss across the filter, actuated valves segregate the backwash header and clean the filter disks associated with that portion of the header.” (Exh. D (Five Star Disk Filter Brochure), p. 2.)

24. Five Star Filtration has further advertised that in the accused Five Star Filtration disk filter “The backwash shoes are designed so that effective efficient cleaning is accomplished without the vacuum shoe contacting the cloth within the suction zone, resulting in extended cloth life.” (Exh. D (Five Star Disk Filter Brochure), p. 2.)

25. In previous litigation, the president of Five Star Filtration, Jay Stevens, has described the Five Star Filtration disk filter systems under oath as follows: “The vacuum area of

the backwash shoe did not contact the cloth or pile media nor did it exert mechanical force on the cloth or pile media.”

26. In previous litigation, the president of Five Star Filtration, Jay Stevens, has described the Five Star Filtration disk filter systems under oath as follows: “As time progresses through the life of the cloth, the cloth is continually being laid down by the directional flow of the water being sucked through the cloth and into the shoe, thus causing the visual appearance similar to what a mechanical force might look like when exerted on the fiber. However, it is a hydraulic, not mechanical, force.”

27. The accused Five Star Filtration disk filter systems thus perform a method of backwashing the pile fabric with a suction head where the suction head is spaced from and does not exert mechanical pressure on said filter media.

28. Claim 1 of the '062 patent recites: “including providing a plurality of said pile filter media in a single tank consisting of a single chamber housing a source of dirty fluid containing particulates.”

29. The image depicted above at Paragraph 15 shows that in the accused Five Star Filtration disk filter system a plurality of said pile filter media are included in a single tank consisting of a single chamber housing a source of dirty fluid containing particulates.

30. Claim 1 of the '062 patent recites: “wherein each of the plurality of filter media is operated to filter particulates from the dirty fluid.”

31. Five Star Filtration has advertised that in the accused Five Star Filtration disk filter “Use of the fixed disk design reduces overall horsepower and permits removal of each individual disk while the filter remains in operation. Each disk can be ISOLATED one from the others.” (Exh. D (Five Star Disk Filter Brochure), p. 2.)

32. Five Star Filtration has further advertised that in the accused Five Star Filtration disk filter “The proprietary cloth is capable of solids capture to 10 micron without having to build up a filter mat or require any run in time.” (Exh. D (Five Star Disk Filter Brochure), p. 2.)

33. Claim 1 of the '062 patent further recites: “the method further comprising removing at least one of said plurality of filter media from said single chamber housing said dirty fluid while continuing to filter said dirty fluid in said single chamber with at least one other of said plurality of filter media without draining the dirty water from said single chamber.”

34. Five Star Filtration has further advertised that in the accused Five Star Filtration disk filter “The Five Star Disk Filter has a unique advantage incorporated into its design that allows filtrate sampling from each disk individually, as well as being able to ISOLATE and remove each disk from the system without filter shutdown or tank draining.” (Exh. D Five Star Disk Filter Brochure), p. 2.)

35. Thus, the accused Five Star Filtration disk filter systems meet every limitation of and infringe claim 1 of the '062 patent.

36. Five Star Filtration has had knowledge of the '062 patent since at least May 26, 2016.

37. In a letter dated May 26, 2016, Nexom, through counsel on behalf of Nexom’s predecessor NXP Wastewater Corp., notified Five Star Filtration that its disk filter systems infringed the '062 patent.

38. Five Star Filtration had actual notice pursuant to 35 U.S.C. § 287 of the '062 patent since at least the receipt that May 26, 2016 letter.

39. At least as of the date upon which it learned of the '062 patent, Five Star Filtration has induced, with specific intent, infringement of the '062 patent by its customers

under 35 U.S.C. § 271(b). Five Star Filtration encouraged and facilitated infringing uses of the accused Five Star Filtration disk filter systems through the creation and dissemination of promotional and marketing materials, instructional materials, product manuals, and/or technical materials to its customers, including but not limited to the brochure attached as Exhibit D.

40. On information and belief, Five Star Filtration further contributed to the infringement of the '062 patent under 35 U.S.C § 271(c), by making, using, offering for sale, selling, and/or importing its accused Five Star Filtration disk filter systems. Five Star Filtration contributed to infringement by others knowing that the accused Five Star Filtration disk filter systems constituted a material part of the invention of the '062 patent, knowing that the accused Five Star Filtration disk filter systems were especially made or adapted to infringe the '062 patent, and knowing that the accused Five Star Filtration disk filter systems were not staple articles of commerce suitable for substantial non-infringing use. Five Star Filtration knew, or should have known, that its promotion and marketing of the accused Five Star Filtration disk filter systems would result in the infringement of at least one claim of the '062 patent.

41. Five Star Filtration's infringement of the '062 patent has been and continues to be willful and deliberate.

42. Five Star Filtration's conduct has caused and will continue to cause Plaintiffs substantial damage, including irreparable harm, for which Plaintiffs have no adequate remedy at law, unless and until Five Star Filtration is enjoined from infringing the '062 patent.

## **COUNT II**

### **INFRINGEMENT OF U.S. PATENT NO. RE 44,570**

43. Nexom repeats and realleges each and every allegation contained in paragraphs 1-42, inclusive, as though fully set forth herein.

44. The '570 patent is valid and enforceable.

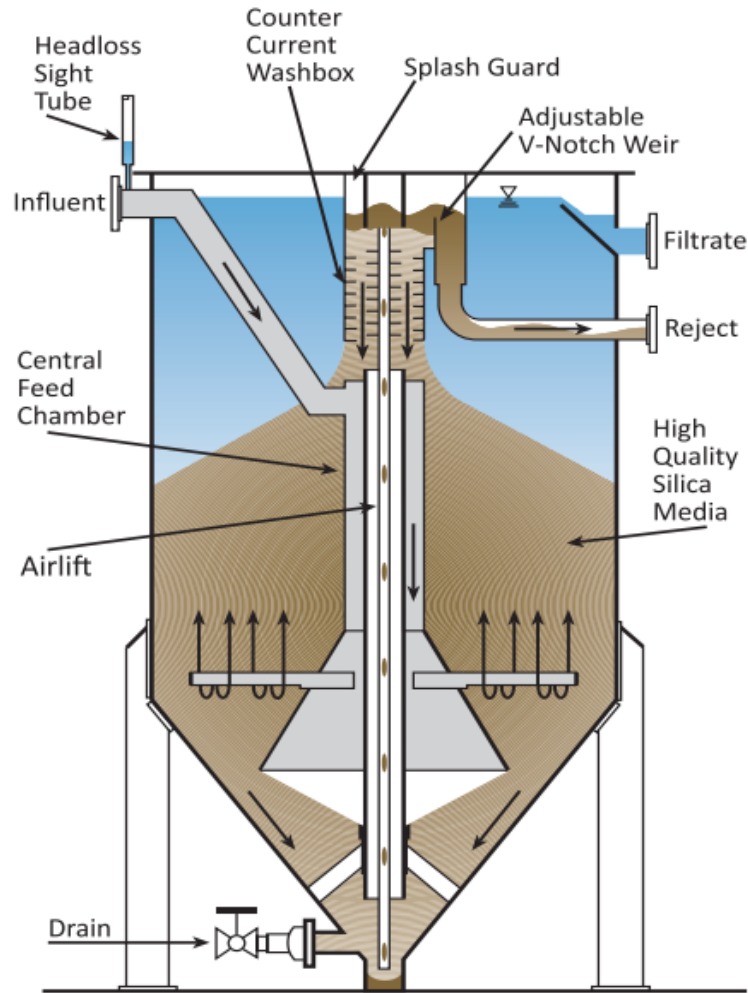


45. Nexom is the exclusive licensee of the '570 patent. Nexom is entitled to receive all damages and the benefits of all other remedies for Five Star Filtration's infringement.

46. Without permission or authorization from Nexom and in violation of 35 U.S.C. § 271, Five Star Filtration is making, selling, offering for sale, and/or using in this District and elsewhere in the United States, certain upflow sand filtration systems ("the accused Five Star Filtration upflow sand filtration systems") that infringe at least claim 1 of the '570 patent.

47. The image below from a Five Star Filtration brochure shows the accused Five Star Filtration upflow sand filtration system. A copy of the Five Star Filtration brochure is attached hereto as Exhibit E.

## Five Star Filtration “UPFLOW” Gravity Sand Filter



48. The accused Five Star Filtration upflow sand filtration systems have been sold for use in facilities in at least Nederland, Colorado. On information and belief, Five Star Filtration has offered this system for sale at other locations in the United States.

49. Claim 1 of the '570 recites “A method, comprising adding a metal salt reagent to water in sufficient quantity and concentration to allow precipitation reactions between the metal salt reagent and a dissolved contaminant in the water to go to at least near completion and to leave unreacted metal salt reagent in the water.”

50. In the accused Five Star Filtration upflow sand filtration systems, ferric chloride is injected into secondary effluent in order to precipitate phosphorous. The ferric chloride is added in sufficient quantity and concentration to allow precipitation reactions between the ferric chloride and a dissolved contaminant in the water, namely phosphorus, to go to at least near completion and to leave unreacted metal salt reagent in the water.

51. Claim 1 of the '570 patent further recites "inducing turbulence in the water."

52. In the accused Five Star Filtration upflow sand filtration systems, turbulence is induced in the influent prior to and as it enters the upflow sand filter.

53. Claim 1 of the '570 patent further recites "flowing the water through a bed of moving filter media."

54. In the accused Five Star Filtration upflow sand filtration systems, the sand is a moving filter media wherein the sand moves upward through the middle of the filter system and is cleaned in a cleaning washbox before it returns to the top of the bed.

55. Claim 1 of the '570 patent further recites "wherein unreacted metal salt reagent in the water reacts with the filter media to generate a reactive metal oxide or hydroxide coating on the filter media to adsorb dissolved contaminants remaining in the water."

56. In the accused Five Star Filtration upflow sand filtration systems, "Regenerated filter media is returned to the top of the filter bed as it falls by gravity from the counter-current washer." (Exh. E (Brochure), p. 3.) Thus, unreacted ferric chloride in the water reacts with the filter media to generate a reactive metal oxide or hydroxide coating on the filter media to adsorb dissolved contaminants remaining in the water.

57. Thus, the Five Star Filtration upflow sand disk filtration systems meet every limitation of and infringe claim 1 of the '570 patent.

58. Five Star Filtration has had knowledge of the '570 patent since at least February 3, 2107.

59. In a letter dated February 3, 2017, Nexom through counsel notified counsel for Five Star Filtration that the Five Star Filtration upflow sand filtration system sold to and in use at Nederland, Colorado infringed the '570 patent.

60. Five Star Filtration had actual notice pursuant to 35 U.S.C. § 287 of the '570 patent since at least the receipt that February 3, 2017 letter.

61. At least as of the date upon which it learned of the '570 patent, Five Star Filtration has induced, with specific intent, infringement of the '570 patent by its customers under 35 U.S.C. § 271(b). Five Star Filtration encouraged and facilitated infringing uses of the accused Five Star Filtration upflow sand filtration systems through the creation and dissemination of promotional and marketing materials, instructional materials, product manuals, and/or technical materials to its customers, including but not limited to the brochure attached as Exhibit E.

62. On information and belief, Five Star Filtration further contributed to the infringement of the '570 patent under 35 U.S.C § 271(c), by making, using, offering for sale, selling, and/or importing its accused Five Star Filtration disk filter systems. Five Star Filtration contributed to infringement by others knowing that the accused Five Star Filtration upflow sand filtration systems constituted a material part of the invention of the '570 patent, knowing that the accused Five Star Filtration upflow sand filtration systems were especially made or adapted to infringe the '570 patent, and knowing that the accused Five Star Filtration upflow sand filtration systems were not staple articles of commerce suitable for substantial non-infringing use. Five Star Filtration knew, or should have known, that its promotion and marketing of the accused Five

Star Filtration upflow sand filtration systems would result in the infringement of at least one claim of the '570 patent.

63. Five Star Filtration's infringement of the '570 patent has been and continues to be willful and deliberate.

64. Five Star Filtration's conduct has caused and will continue to cause Nexom substantial damage, including irreparable harm, for which Nexom has no adequate remedy at law, unless and until Five Star Filtration is enjoined from infringing the '570 patent.

### **COUNT III**

#### **INFRINGEMENT OF U.S. PATENT NO. 7,399,416**

65. Nexom repeats and realleges each and every allegation contained in paragraphs 1-64, inclusive, as though fully set forth herein.

66. The '416 patent is valid and enforceable.

67. Nexom is the exclusive licensee of the '416 patent. Nexom is entitled to receive all damages and the benefits of all other remedies for Five Star Filtration's infringement.

68. Without permission or authorization from Nexom and in violation of 35 U.S.C. § 271, Five Star Filtration is making, selling, offering for sale, and/or using in this district and elsewhere in the United States, accused Five Star Filtration upflow sand filtration systems that infringe at least claim 1 of the '416 patent.

69. The image in Paragraph 47 of this Complaint and in Exhibit E hereto shows the accused Five Star Filtration sand filtration systems.

70. Claim 1 of the '416 patent recites: "A reactive filtration method, comprising continuously regenerating an iron oxide coated sand bed by agitating a mixture of iron granules and sand under aerobic conditions."

71. As shown in the figure in Paragraph 47 above, which is reproduced from Exhibit

E, the accused Five Star Filtration upflow sand filter systems include a sand bed. The accused Five Star Filtration upflow sand filter systems provide a “continuous supply of filtered water without interruptions for backwash cleaning cycles. ... A continuously cleaning washbox utilizes filtered water to clean the media before it returns to the top of the bed. ... Regenerated filter media is returned to the top of the filter bed as it falls by gravity from the counter-current washer.” (Exh. E (Brochure), p. 3.)

72. In the accused Five Star Filtration upflow sand filter systems, “A continuously cleaning washbox utilizes filtered water to clean the media before it returns to the top of the bed. ... The high energy, turbulent upward flow inside the airlift provides a scrubbing action that effectively separates the sand and the captured solids before discharging them in the washbox at the top of the filter.” (Exh. E (Brochure), p. 3.)

73. Ferric chloride is added to the influent in the accused Five Star Filtration upflow sand filter systems in sufficient quantities that excess ferric chloride is available to react with the sand bed. As a result, the sand is coated with iron oxide.

74. Claim 1 of the ’416 patent further recites: “while simultaneously filtering contaminants from waste water flowing through the sand bed.”

75. In the accused Five Star Filtration upflow sand filter systems , the bed of iron oxide coated sand will react with and filter contaminants, such as phosphorus, from the waste water flowing through the sand bed.

76. Thus, the Five Star Filtration upflow sand disk filtration systems meet every limitation of and infringe claim 1 of the ’416 patent.

77. Five Star Filtration has had knowledge of the ’416 patent since at least February 3, 2107.

78. In a letter dated February 3, 2017, Nexom through counsel notified counsel for Five Star Filtration that the Five Star Filtration upflow sand filtration system sold to and in use at Nederland, Colorado infringed the '416 patent.

79. Five Star Filtration had actual notice pursuant to 35 U.S.C. § 287 of the '416 patent since at least the receipt of the February 3, 2017 letter.

80. At least as of the date upon which it learned of the '416 patent, Five Star Filtration has induced, with specific intent, infringement of the '416 patent by its customers under 35 U.S.C. § 271(b). Five Star Filtration encouraged and facilitated infringing uses of the accused Five Star Filtration upflow sand filtration systems through the creation and dissemination of promotional and marketing materials, instructional materials, product manuals, and/or technical materials to its customers, including but not limited to the brochure attached as Exhibit E.

81. On information and belief, Five Star Filtration further contributed to the infringement of the '416 patent under 35 U.S.C. § 271(c), by making, using, offering for sale, selling, and/or importing its accused Five Star Filtration disk filter systems. Five Star Filtration contributed to infringement by others knowing that the accused Five Star Filtration upflow sand filtration systems constituted a material part of the invention of the '416 patent, knowing that the accused Five Star Filtration upflow sand filtration systems were especially made or adapted to infringe the '416 patent, and knowing that the accused Five Star Filtration upflow sand filtration systems were not staple articles of commerce suitable for substantial non-infringing use. Five Star Filtration knew, or should have known, that its promotion and marketing of the accused Five Star Filtration upflow sand filtration systems would result in the infringement of at least one claim of the '416 patent.

82. Five Star Filtration's infringement of the '416 patent has been and continues to be willful and deliberate.

83. Five Star Filtration's conduct has caused and will continue to cause Nexom substantial damage, including irreparable harm, for which Nexom has no adequate remedy at law, unless and until Five Star Filtration is enjoined from infringing the '416 patent.

### **PRAYER FOR RELIEF**

Wherefore, Nexom respectfully pray for entry of a judgment and relief as follows:

A. For a judgment that Five Star Filtration has infringed the '062, '570 and '416 patents;

B. For a preliminary and permanent injunction enjoining Five Star Filtration and its agents, officers, directors, employees and all persons in privity or active concert or participation with them, directly or indirectly, from infringing, inducing others to infringe, or contributing to the infringement of the '062, '570, and '416 patents;

C. For a judgment and award that Five Star Filtration account for and pay to Nexom damages adequate to compensate for Five Star Filtration's infringement of the '062, '570, and '416 patents, including lost profits but in no event less than a reasonable royalty;

D. For a judgment and award of any supplemental damages sustained by Nexom for any continuing post-verdict infringement of the '062, '570, and '416 patents until entry of final judgment with an accounting as needed;

E. For a finding that Five Star Filtration's infringement is willful and an award of increased damages for willful infringement pursuant to 35 U.S.C. § 284;

F. For an order finding that this case is exceptional case under 35 U.S.C. § 285 and awarding Nexom its costs, expenses, and disbursements incurred in this action, including



reasonable attorneys' fees as available by law to be paid by Five Star Filtration;

G. For an award of pre-judgment interest, post-judgment interest, and costs in this action; and

H. For an award of such other relief to Nexom as this Court deems just and proper.

**DEMAND FOR JURY TRIAL**

Nexom demands a trial by jury on all issues so triable.

Dated: June 14, 2017

Respectfully submitted,

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